

FIGURE 1



FIG. 2A



FIG. 2B

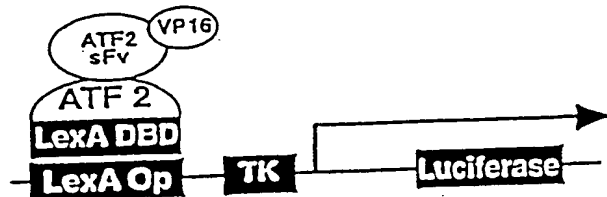


FIG. 2C

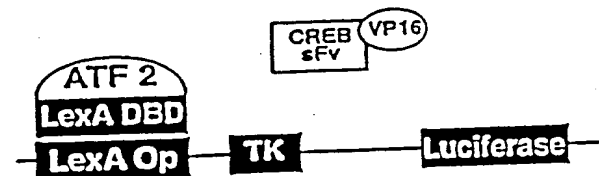
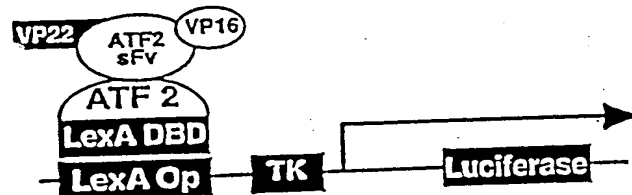


FIG. 2D



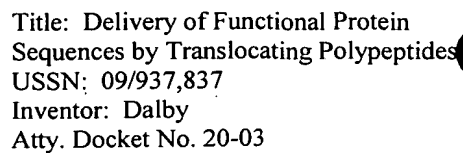


FIG. 3A

Chemical structure of a phosphonate-protected nucleoside derivative (FIG. 3A). The structure features a pyrimidine ring substituted with a phosphonate group ($\text{Na}_4\text{P}_3\text{O}_{10}$) at the 2-position and a vinyl group at the 4-position. The vinyl group is connected via a trans-vinyl bridge to a long aliphatic chain containing an amide linkage, which is further connected to a 4-hydroxyphenyl group ($\text{B}(\text{OH})_2$).

O=C(O)Nc1ccc(cc1CNC(=O)CCCC(=O)Nc2ccccc2)C(=O)O

Chemical reaction scheme showing the formation of a cyclic boronate ester. The reactants are an oligo-phenylboronic acid and a substituted phenol (VP22). The product is a cyclic boronate ester where the boron atom is coordinated to the phenolic oxygen of the oligo group and the oxygen of the phenol, forming a five-membered ring. The reaction is reversible, as indicated by the equilibrium arrows.

500 CENTRE STREET



Title: Delivery of Functional Protein
Sequences by Translocating Polypeptides
USSN: 09/937,837
Inventor: Dalby
Atty. Docket No. 20-03

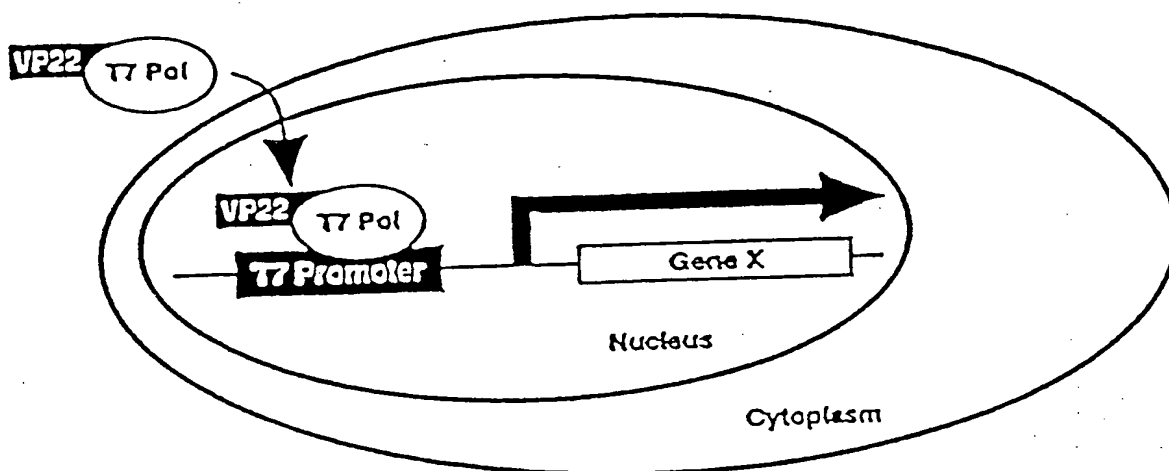


FIGURE 4



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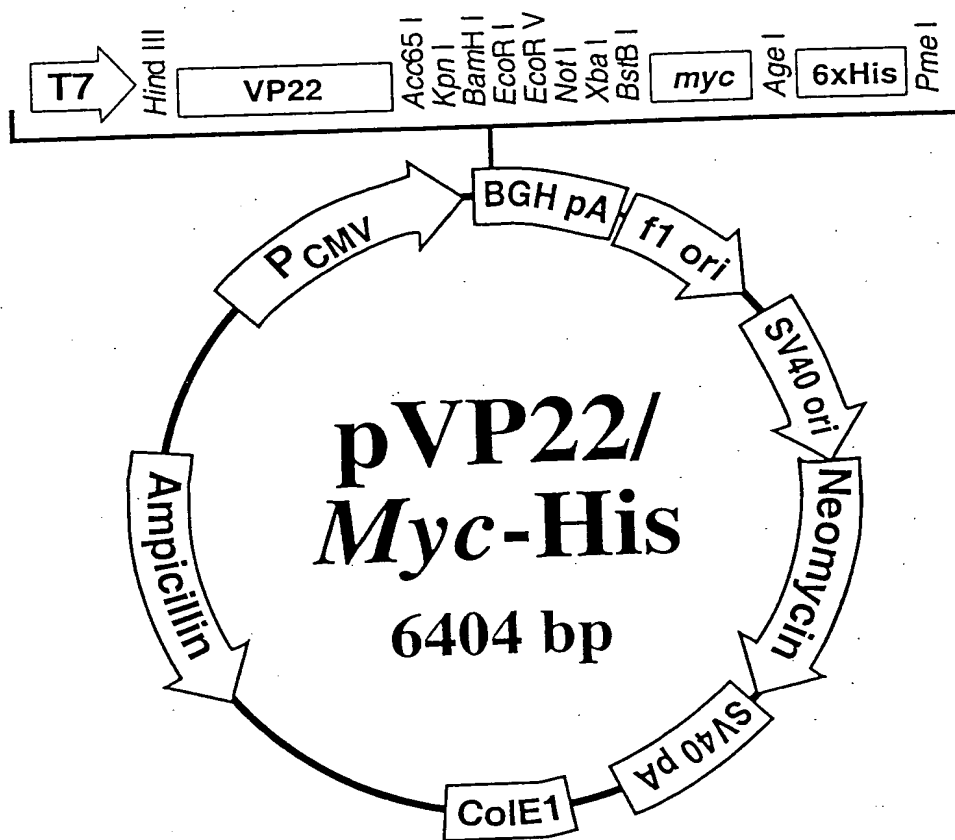


FIGURE 5

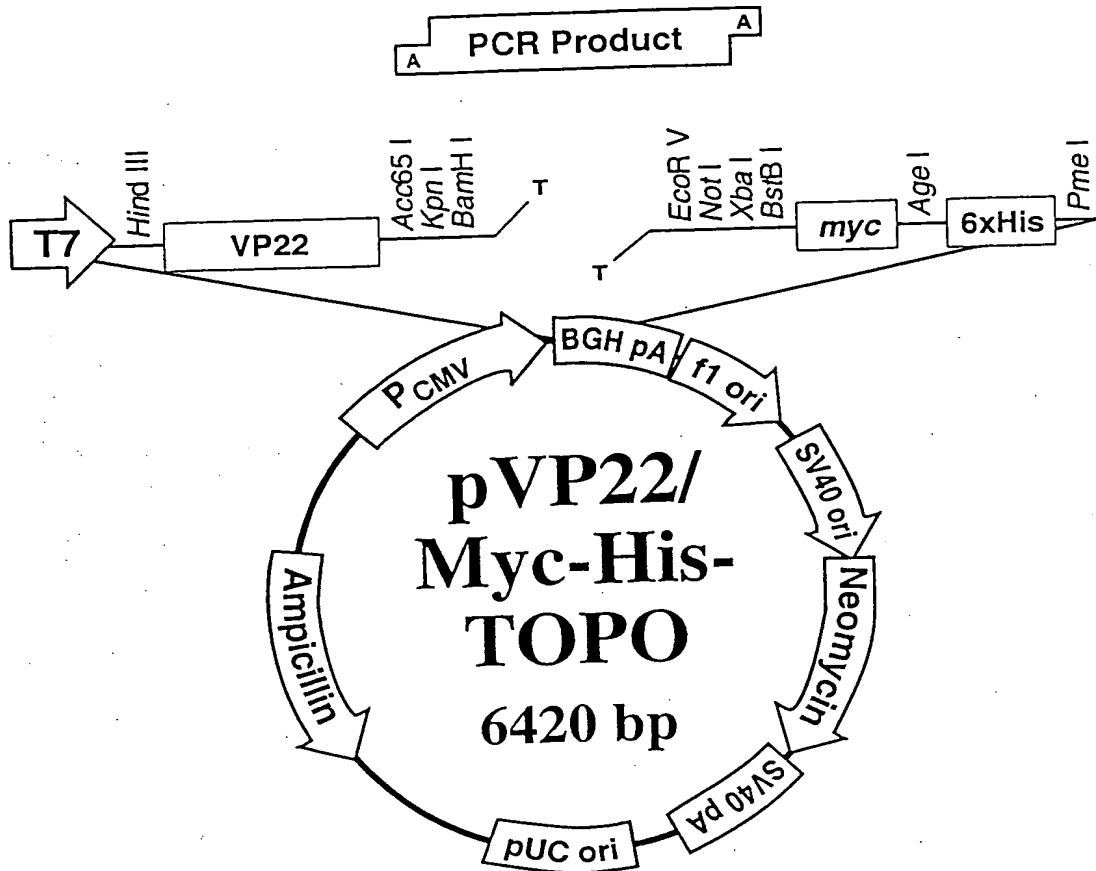


FIGURE 6